MATERIA MEDICA AND GENERAL THERAPEUTICS.

7. *Protoxide of Nitrogen as an Anæsthetic.*—M. HERMANN states that on two occasions, when he inhaled this gas in a pure state, he was completely asphyxiated. The effect nevertheless was not unpleasant, because the intoxicating effect of the gas overpowered the sensation of dyspnœa, although it is as undoubtedly present. This condition of asphyxia, in which the face is pale and the lips blue, differs very much from that produced by inhaling the same gas mixed with oxygen, in the proportion of 4 to 1. The experimentalist is intoxicated, but in a less degree, and the face retains its natural colour. M. Hermann remarks that surgeons, not now contented with ordinary anæsthetics, are trying this kind of inhalation; he thinks that, inhaled by itself, the protoxide of nitrogen is dangerous, as it is likely to produce a mortal asphyxia; and if administered mixed with oxygen, it is a very weak anæsthetic, of very short duration.—*Brit. Med. Journ.*, April 27, 1867.

8. *Chloroform and Ether in Mixture.*—A mixture of one part of chloroform and two of ether has been by some considered a perfectly safe anæsthetic mixture, it being thought that the stimulating properties of the ether would counteract the depressing effects of chloroform. Mr. ROBERT ELLIS, however, states (*Med. Times and Gaz.*, March 9, 1867) that too much reliance has been placed upon the formula of its constitution, and too little on its evaporation. He gives the following as the conclusions to which he has been led after a long series of experiments:—

"1. That the ingredients of fluid anæsthetic mixtures evaporate in a great degree, independently of each other, and in extremely differing quantities.

"2. That though alcohol exerts *in vacuo*, a powerful influence in restraining and equalizing their vaporization, this influence is in a great measure annulled in evaporation into free air, as in an inhaler.

"3. That the only method of obtaining a true anæsthetic mixture is by consideration of the respective volatility of its ingredients, and so adjusting their proportions as to provide that all should evaporate simultaneously.

"4. But as this can only be done by a very great reduction of the quantities employed, both of alcohol and chloroform, then the object of the mixture is entirely frustrated, and it is reduced in its properties to one similar to ether only —the most volatile of the ingredients always taking precedence of the rest.

"5. That if impure alcohol and ether are used, these defects of unequal volatilization become still more exaggerated, and the result vitiated by the water left behind after evaporation.

"The behaviour of the mixture 'C' which proved fatal in the case at Bristol was most carefully examined by me. I found that it was most unreliable, parting with its ether rapidly and with its chloroform slowly."

9. *Action of Digitalis.*—M. LEGROUX, of Paris, as the result of his investigations, has arrived at the following conclusions: (1) That in all doses digitalis (whose active principle is digitaline) exercises a special influence upon the circulation. (2) If in the poisonous dose digitalis acts directly on the heart, it seems that in the therapeutic dose it first produces contraction of the capillaries, and only secondarily affects the heart in re-establishing the equilibrium of the circulation. (3) According to this theory, digitalis is a sedative to the circulation, in the sense that it calms the disturbances of the latter, doing so not by an excitant or tonic action. (4) The influence of digitalis on temperature, secretion, nutrition, uterine contraction, &c., can only be explained by its excitant action on the ultimate branches of the sympathetic system. (5) This theory explains the favourable results obtained by the use of digitalis in fevers, cerebral affections, hemorrhages, dysmenorrhœa, congestions, dropsies, &c.—*Gaz. Méd. de Paris,* April 27, 1867.

10. *Chlorinated Mixture.*—Dr. W. D. DOBIE gives (*Edinburgh Med. Journ.*, March, 1867) the following formula for the preparation of this mixture, which he extols in the treatment of cholera.

"Take a clear dry wine or brandy bottle, place it for a few minutes upon a hot brick, or upon a stove, until it becomes thoroughly warm, then take eight grains of chlorate of potash in coarse powder, and add to it one fluidrachm, by measure, of chemically pure hydrochloric acid; agitate the chlorate in the acid until all effervescence ceases, and the chlorate is completely dissolved. Then add an ounce of water, shaking the bottle briskly. Continue thus to add sixteen ounces of water, ounce by ounce, shaking the bottle between each addition. If two fluidrachms of chloric ether be now added, the mixture is complete.

"To this mixture I should be much inclined to add a moderate dose of the liquor morphiæ hydrochloratis, following out a suggestion of Dr. Alderson, of which I shall say a few words presently.

"The chlorine mixture, as thus prepared, is about one-third saturated with chlorine; it can be readily taken by patients direct from the bottle, but it was generally administered with an equal bulk of water. Three drachms of the mixture are about equal in strength to a drachm of the liquor chlori of the British Pharmacopœia.

"The dose of the chlorinated mixture was half an ounce every hour, or every two hours, to an adult; if the first dose was vomited, another was given after a shorter interval."

11. *Comparative Immunity of Rabbits to the Poisonous Action of Atropia.*—Dr. W. OGLE relates (*Med. Times and Gaz.*, May 4, 1867) some interesting experiments instituted by him in regard to this matter from which he draws the following conclusions:—

"1. That a rabbit of middle age can live for, at any rate, six days exclusively on belladonna without inconvenience.

"2. That a rabbit can tolerate enormous doses of atropia administered either by the stomach or by subcutaneous injection, and that this tolerance is not due to the non-absorption of the poison.

"3. That this tolerance increases with the age of the rabbit.

"4. That dilatation of the pupils is, however, produced just as readily, if not more so, in an old rabbit as it is in a young one."

MEDICAL PATHOLOGY, SPECIAL THERAPEUTICS, AND PRACTICAL MEDICINE.

12. *Researches on Animal Temperature.*—M. PETER has laid before the French Academy the results of his researches on animal temperature. (A.) With respect to the modifications of the general temperature in their relations to modifications of certain functions or changes in volume of certain organs. 1. There is no constant relation between the variations of temperature and those of the circulation. Thus the increase of frequency of the pulse in disease is not necessarily attended with increase of temperature (taken in the axilla); and when this is raised, while there is increased frequency of pulse, there is no constant relation between the increase of pulse and elevation of temperature. 2. There is no constant relation between variations of temperature and those of respiration. 3. There is no constant relation between variations of temperature and changes in the volume of the liver. 4. *But there is a constant relation between the variations of the volume of the spleen and of the temperature.* Thus, whenever during illness the temperature of the body is increased, there is augmentation in the size of the spleen, and the relation of these changes is always constant. For one or more degrees of elevation of temperature, for example, the spleen generally increases one or more centimetres in its vertical diameter. The corollary to be drawn is that the spleen is an organ of hæmatosis, and that it actively concurs in the production of animal heat.

(B.) With respect to the modification of local temperature and those of sensibility. There is a constant relation between the variations of these, when